

## CLAIMS

## WHAT IS CLAIMED IS:

1. Seed of sunflower inbred line designated H1063R, representative seed of said line having been deposited under ATCC Accession No. \_\_\_\_\_.
2. A sunflower plant, or parts thereof, produced by growing the seed of claim 1.
3. Pollen of the plant of claim 2.
4. An ovule of the plant of claim 2.
5. A sunflower plant, or parts thereof, having all of the physiological and morphological characteristics of the sunflower plant of claim 2.
6. A tissue culture of regenerable cells from the sunflower plant of claim 2.
7. A tissue culture according to claim 6, wherein a cell or protoplast of the tissue culture is derived from a tissue selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, flowers, and stalks.
8. A sunflower plant regenerated from the tissue culture of claim 6, wherein the regenerated plant is capable of expressing all the morphological and physiological characteristics of inbred line H1063R, representative seed of said line H1063R having been deposited under ATCC Accession No. \_\_\_\_\_.
9. A sunflower plant with all of the physiological and morphological characteristics of sunflower inbred H1063R, wherein said sunflower plant is produced by a tissue culture process using the sunflower plant of claim 5 as the starting material for such a process.
10. A method for producing a hybrid sunflower seed comprising crossing a first inbred parent sunflower plant with a second inbred parent sunflower plant and harvesting the resultant hybrid sunflower seed, wherein said first inbred parent sunflower plant or second said parent sunflower plant is the sunflower plant of claim 2.
11. A hybrid sunflower seed produced by the method of claim 10.

12. A hybrid sunflower plant, or parts thereof, produced by growing said hybrid sunflower seed of claim 11.
13. A sunflower seed produced by growing said sunflower plant of claim 12 and harvesting the resultant sunflower seed.
14. An F<sub>1</sub> hybrid seed produced by crossing the inbred sunflower plant according to claim 2 with another, different sunflower plant.
15. A hybrid sunflower plant, or its parts, produced by growing said hybrid sunflower seed of claim 14.
16. A sunflower seed produced by growing said sunflower plant of claim 15 and harvesting the resultant sunflower seed.
17. A method for producing inbred H1063R, representative seed of which have been deposited under ATCC Accession No. \_\_\_\_\_, comprising:
  - a) planting a collection of seed comprising seed of a hybrid, one of whose parents is inbred H1063R, said collection also comprising seed of said inbred;
  - b) growing plants from said collection of seed;
  - c) identifying inbred parent plants;
  - d) controlling pollination in a manner which preserves the homozygosity of said inbred parent plant; and
  - e) harvesting the resultant seed.
18. The process of claim 17 wherein step (c) comprises identifying plants with decreased vigor.
19. A method for producing a H1063R-derived sunflower plant, comprising:
  - a) crossing inbred sunflower line H1063R, representative seed of said line having been deposited under ATCC accession number \_\_\_\_\_, with a second sunflower plant to yield progeny sunflower seed; and
  - b) growing said progeny sunflower seed, under plant growth conditions, to yield said H1063R-derived sunflower plant.

20. A H1063R-derived sunflower plant, or parts thereof, produced by the method of claim 19, said H1063R-derived sunflower plant expressing a combination of at least two H1063R traits selected from the group consisting of: a relative maturity of approximately 88-98 days, high oleic acid content, low total saturated oil content, high yield and above average seeds per head.
21. A method for producing a H1063R-derived sunflower plant, comprising:
- a) crossing inbred sunflower line H1063R, representative seed of said line having been deposited under ATCC accession number \_\_\_\_\_, with a second sunflower plant to yield progeny sunflower seed;
  - b) growing said progeny sunflower seed, under plant growth conditions, to yield said H1063R-derived sunflower plant;
  - c) selfing said H1063R-derived sunflower plant to yield additional H1063R-derived progeny sunflower seed;
  - d) growing said progeny sunflower seed of step (c) under plant growth conditions, to yield additional H1063R-derived sunflower plants; and
  - e) repeating the crossing and growing steps of (c) and (d) from 0 to 7 times to generate further H1063R-derived sunflower plants.
22. A H1063R-derived sunflower plant, or parts thereof, produced by the method of claim 21.
23. The H1063R-derived sunflower plant, or parts thereof, of claim 22, wherein said H1063R-derived sunflower plant, or parts thereof, express a combination of at least two H1063R traits selected from the group consisting of: a relative maturity of approximately 88-98 days, high oleic acid content, low total saturated oil content, high yield and above average seeds per head.
24. A method for producing a H1063R-derived sunflower plant, comprising:
- a) crossing inbred sunflower line H1063R, representative seed of said line having been deposited under ATCC accession number \_\_\_\_\_, with a second sunflower plant to yield progeny sunflower seed;

- b) growing said progeny sunflower seed, under plant growth conditions, to yield said H1063R-derived sunflower plant;
  - c) crossing said H1063R-derived sunflower plant with another sunflower plant to yield additional H1063R-derived progeny sunflower seed;
  - d) selfing said H1063R-derived sunflower plant to yield additional H1063R-derived progeny sunflower seed;
  - e) growing said progeny sunflower seed of step (c) under plant growth conditions, to yield additional H1063R-derived sunflower plants; and
  - f) repeating the crossing and growing steps of (c) and (d) from 0 to 7 times to generate further H1063R-derived sunflower plants.
25. A H1063R-derived sunflower plant, or parts thereof, produced by the method of claim 24.
26. A H1063R-derived sunflower plant, or parts thereof, produced by the method of claim 25.
27. The sunflower plant, or parts thereof, of claim 2, wherein the plant or parts thereof have been transformed so that its genetic material contains a transgene operably linked to a regulatory element, and wherein said transgene is selected from the group consisting of: a relative maturity of approximately 88-98 days, high oleic acid content, low total saturated oil content, high yield and above average seeds per head.
28. A method for producing a sunflower plant that contains in its genetic material a transgene, comprising crossing the sunflower plant of claim 26 with either a second plant of another sunflower line, or a non-transformed sunflower plant of the line H1063R, so that the genetic material of the progeny that result from the cross contains a transgene operably linked to a regulatory element.
29. A sunflower seed having an oleic acid content greater than 88% and a total saturated oil content of less than 7.0%.

30. The seed of claim 29, wherein said oleic acid content is between about 88.0% and 90.0%.
31. The seed of claim 29, wherein said oleic acid content is between about 90.0% and 92.0%.
32. The seed of claim 29, wherein said total saturated oil is between about 6.0% and 7.0%.